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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A01N 25/00 — A1

(11) International Publication Number: WO 97/02741

(43) International Publication Date: 30 January 1997 (30.01.97)

(21) International Application Number: PCT/US95/15843

(22) International Filing Date: 11 December 1995 (11.12.95)

(30) Priority Data:
08/500,613 11 July 1995 (11.07.95) US

(71)(72) Applicant and Inventor: CHUHRAN, James, E. [US/US]; 7676 Dolphin, Detroit, MI 48239 (US).

(74) Agent: CHANDLER, Charles, W.; 33150 Schoolcraft, Livonia, MI 48150 (US).

(81) Designated States: AM, AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LT, LU, LV, MD, MG, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: TOXICANT-FREE RODENT EXTERMINATOR

(57) Abstract

A toxicant-free composition for exterminating rodents, such as rats and mice, comprises pellets of crushed corn cobs bound together with a sweet attractant, such as molasses.

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TOXICANT-FREE RODENT EXTERMINATOR

Background of the Invention

Many products are available for controlling rodents, such as rats and mice, and insects, such as ants. Usually such products employ an inert substance combined with a rodenticide. However, products with toxicant may only be used in carefully selected areas to avoid contaminating food supplies, water supplies, domestic animals and people. Further, products using a rodenticide are undesirable because any animal, bird, or reptile feeding on a poisoned rat or mouse will also die from the toxic product.

Examples of such prior art products can be found in the following United States Patent Nos.: 1,952,977 which was issued March 27, 1934 to J. Bernard Edmonds for "Method of Treating Red Squill for Use as a Rodent Exterminator"; 4,287,183 which was issued September 1, 1981 to John D. Hagerman and Brenda M. Hagerman for "Method for Killing Rodents"; 4,379,139 which was issued April 5, 1983 to Ray F. Dawson for "Anticoagulant Rodenticide With Laceration Means"; 4,518,580 which was issued May 21, 1985 to Nunzio R. Pasarela for "Expanded Corncob Grits Having Increased Absorptivity and a Method for the Preparation thereof"; 4,581,378 which was issued April 8, 1986 to Remus Lazar and Emil P. Lira for " Rodenticide Compositions Comprising an Artificial Sweetener and a Rodenticide"; 4,815,923 which was issued March 28, 1989 to Raymon W. Lush for "Sweet Corn Based Rodenticide"; 5,019,564 which was issued May 28, 1991 to H. Edward Lowe, Ricky L. Yoder and Clayton C. Nelson for "Non-Clay Agricultural Granule"; 5,132,321 which was issued July 21, 1992 to Garland G. Corey for "Anticoagulant/Surfactant Rodenticidal Compositions and Method"; and 5,290,556 which was issued March 1, 1994 to Gerald H. McKibben, Joseph C. Dickens and James W. Smith for "Plastic Bait Composition for Attracting and Killing Crop Pests".

Some non-toxic bait compositions have been disclosed in the prior art. These include United States Patent No. 5,186,935 which was issued February 16, 1993 to John W. Tucker for "Insecticidal Bait Composition and Method of Making Same".

Summary of the Invention

The broad purpose of the present invention is to provide a toxicant-free composition that can be used for controlling rodents, such as rats and mice. The preferred embodiment of the invention comprises pellets formed of crushed corn cobs, a binder and a sweet rodent attractant in the form of molasses.

Another object of the invention is to provide a toxicant-free product for controlling

insects, such as ants, in the form of pulverized or ground-up corn cobs which may be sprinkled in the area where the ants are present.

Some of the advantages of the invention is that the product can be safely used indoors, outdoors, in the home, around food and in the fields. It can be applied in many ways, such as by air planes, helicopters, and other forms of vehicles. In one form of the invention, the material will not dissolve in water. The product can be dispensed by hand without fear of toxic chemical exposure. It is completely safe to animals, birds or reptiles that eat a rat or mouse killed by the product. The product will not contaminate a drinking water supply, will not harm fish, birds or wild life, will not cause any harmful effects if swallowed or absorbed through the skin, will not harm children or pets, and can be safely eaten by domestic animals and livestock.

The unique characteristic of the inventive product is that when eaten by rats and mice, it accomplishes the same object as products classified as a rodenticide. It has been safely tested on numerous types of rats with equal degrees of success. The product over a period of time, causes rats to fall asleep as they become gradually undernourished. In the preferred form of the invention, the product is applied in the form of a pellet. The tests indicate that it is not harmful to animals, other than rats and mice.

Description of the Preferred Embodiment

The composition of this invention is produced by preparing a substantially dry base of crushed corn cobs, without kernels, and 1% by weight of molasses as a rodent attractant. The corn cobs are crushed to a size that can be easily ingested by the rodent, for example 0.1-5 millimeters in diameter. Five pounds of wheat chaff may be added per 1,000 pounds of the crushed corn cobs to give it a color. One gallon of celery juice per 1,000 pounds of crushed corn cobs appears to aid in terminating the rodents. The corn cobs are exposed to hot steam during the conventional pelletizing process, and molasses is mixed into the corn cobs. The pellets are bound by the molasses which acts as a sweet attractant as well as a binder. Preferably, the pellets are about 3/15" in diameter and typically 1/2" long. The pellets are distributed in locations where the rats or mice are active. Over a period of several days, the rats and mice die after consuming the composition.

When the corn cobs are crushed in a finer powder-like form, the powder can be distributed in the vicinity where ants are present. The ants appear to die upon contact with the powder.

The material made for use on rodents, can be formed into shapes, other than pellets. Further, other sweets and attractants can be used, such as honey to attract the rodents to the pellets.

The pellets may be provided with a coating intended to protect the composition from contact with water, such as paraffin. The following example illustrates the use of the preferred embodiment of the invention.

EXAMPLE I

SUMMARY:

Five male and five female Sprague Dawley derived rats were fed Delmar Company sample: Orbis Molasses Pellet, as supplied. All animals died by day 7. Clinical observations included dehydration, tremors, lethargy, soft light stool and weight loss.

PURPOSE:

To determine the effectiveness of the test material to produce death in the treated animals when administered as supplied, ad libitum for a period of 14 days.

MATERIAL AND METHODS:

TEST ANIMALS:

Species: Rattus norvegicus

Strain: Sprague Dawley derived

Sex: Male and female (females nulliparous and non-pregnant)

Weight Range (at initiation): Male: 115-125 grams; Female: 115-125 grams

Number/Sex/Dose Level: 5 male, 5 female

Identification: Animals placed on test were identified with cage labels and ear punches.

Husbandry:

Diet: Standard laboratory feed for rodents; food and water were available ad libitum.

Housing: Animals were housed in suspended stainless steel wire-mesh cages in a room controlled for temperature (targeted at 21 degrees C +/- 1 degree).

Acclimation: Animals were acclimated to the testing facility at least 7 days prior to the start of testing. Animals were observed for general health and suitability for testing during this period.

Justification of Selection of Test System: The rat is the preferred species for acute oral toxicity testing because of an extensive historical data base.

Assignment to Dose Groups: Animals placed on test were randomly assigned to dose groups. Only rats with body weight within +/- 20% of the mean body weight of rats of the same age, strain, and sex were used.

Route of Administration: The test material was placed in 4 ounce, clear glass feeding jars for continuous ad libitum access to the food.

Frequency: Additional test material was added daily.

Test Duration: 7 days.

DOSING PROCEDURE:

Animal Preparation: The rats were randomly selected and weighed on day 0, ear punched and single housed in cages.

Sample Preparation: The test material was dosed as supplied.

Treatment: An equal quantity of the test material was given to each animal.

IN LIFE OBSERVATION:

Body Weight: Body weight was recorded in grams for each animal daily.

Signs of Toxicity and Mortality: All test animals were observed for signs of toxicity and mortality twice daily seven days a week after administration. Test animals were observed for a total of 7 days after dosing. Observations included the following: circulatory, autonomic and central nervous systems, somatomotor activity, behavior patterns, skin and fur, and eyes and mucous membranes.

Post-Mortem Observations: A gross necropsy was performed on all test animals.

RESULTS:

Mortality: All animals died by day 7. On day 4, one female was found dead. On day 5, two males and one female were found dead. On day 6, two males and two females were found dead. On day 7, one male and one female were found dead.

Observations: Clinical observations noted during the study included dehydration, lethargy, diarrhea, tremors, weight loss, hunching and soft stool.

Body Weight: All animals had a daily weight loss.

Gross Pathology: At necropsy, tissue in some animals were autolyzed. Gross observations noted an absence of adipose tissue on some animals.

DISCUSSION:

Five male and five female Sprague Dawley derived rats for each dose were fed the sample as supplied.

All animals exhibited a daily weight loss and appeared dehydrated, however, they were noted to continue eating the test material during the daylight hours.

CONCLUSION:

The test material, when administered as supplied causes death within 7 days to rats initially weighing between 115 to 125 grams.

EXAMPLE II

A powderized form of toxicant-free pulverized corn cobs was distributed on ants which died upon contact with the sample.

Although particular examples of the present invention are shown and described, it is apparent that changes and modifications may be made therein without departing from the invention in its broadest aspects.

Having described my invention I claim:

CLAIMS

1. A toxicant-free bait powder for insects, such as ants, consisting of corn cobs reduced to a particulate form.

2. A method for killing rodents which comprises orally administering to the rodents an effective amount of a toxicant-free composition comprising corn cobs in a particulate form, mixed with a sweet attractant.

3. A toxicant-free rodent exterminating bait for oral administration to a rodent comprising:

particulate toxicant corn-free cob particles, mixed with a rodent attractant.

4. A bait as defined in claim 3, in which the corn cob particles are bound together with the attractant in a pellet form.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US95/15843

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A01N 25/00
US CL : 424/84, 403, 405, 409, 410, 439;514/951
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/84, 403, 405, 409, 410, 439;514/951

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US,A,5,019,564 (LOWE ET AL) 28 May 1991, see entire document	1-4

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Date of the actual completion f the international search 09 FEBRUARY 1996	Date of mailing of the international search report 23 FEB 1996
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